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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,368	07/12/2001	Waldemar Lazik	06-01	2971

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EXAMINER

KHARE, DEVESH

ART UNIT	PAPER NUMBER
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1623

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/889,368	LAZIK, WALDEMAR	
	Examiner	Art Unit	
	Devesh Khare	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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The applicant's amendment and remarks received on 12/01/2003 are acknowledged.

Claims 8-16 have been amended. Claim 17 has been canceled. The rejection of claims 9-16 under 35 U.S.C. 112, second paragraph has been overcome by the applicant's amendment. The rejection of claims 8-13 under 35 U.S.C. 102(b) has been withdrawn.

Claims 8-16 are currently pending in this application.

Information Disclosure Statement

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered of record.

35 U.S.C. 103(a) rejection

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greene et al. (U.S. Patent 5,770,711) (Greene patent) of record.

Claims 8-13 are drawn toward malatyl polysaccharide, malatyl starch of the formula I, malatyl galactomannan on the basis of mannose of the formula IIa, malatyl

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galactomannan based on galactose of the formula IIb and malatyl cellulose of the formula III.

The Greene patent teaches a polysaccharide substituted by a monovalent aliphatic group containing at least two carboxylic acid groups derived from epoxy succinic acid (malatyl cellulose) and a method of their preparation (see abstract).

Greene patent discloses a malatyl polysaccharide (cellulose), which is derivatized with the monovalent aliphatic groups containing at least two carboxylic acid groups, derived from 2,3-epoxysuccinic acid (see col. 2, lines 25-33). The disodium salt of the derivatized malatyl polysaccharides is disclosed in col. 2, lines 64-67. In col.3, lines 50-53, examples of derivatized polysaccharides including cellulose, starch and natural gum (galactomannans) are disclosed. It is noted that the present invention is directed to prepare a malatyl polysaccharide by the reaction of epoxy succinate (disodium salt of cis-epoxy succinic acid) with a polysaccharide (see specification page 3, lines 14-15). In col.4, lines 66-67 and col. 5, lines 1-18, a derivatized cellulose (malatyl derivative) is prepared in a solid phase reaction, where a paper containing cellulose is derivatized with epoxy succinate.

The Greene patent differs from the applicant's invention that Greene patent does not provide the explicit chemical structures of the derivatized malatyl polysaccharides.

It would have been obvious to person having ordinary skill in the art at the time the invention was made, to prepare the malatyl polysaccharides using the method of Greene patent because the art teaches the preparation of a derivatized cellulose

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(malatyl derivative) in a suspension or solid phase reaction, by reacting a polysaccharide with an epoxysuccinic acid, the characteristics desirable wherein the carboxyl groups are maintained in their preparation because Greene patent teaches a derivatized polysaccharide in which the hydroxyl group is substituted by monovalent aliphatic groups containing at least two carboxylic acid groups (see col.1, lines 60-65). One would be motivated to use the derivatized polysaccharide in which at least a portion of the active hydrogens originally present in the polysaccharide are substituted by monovalent aliphatic groups consisting a carboxylic group in order to produce disposable absorbent products at low cost (col.1, lines 54-58).

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greene et al. (U.S. Patent 5,770,711) (Greene patent).

Claims 14-16 are drawn toward a method of preparing malatyl polysaccharide according to claim 8 by reacting polysaccharide at a pH 9-13 with an epoxy compound selected from the group consisting of cis-epoxy succinate and epoxy carboxylic acids. The additional claim limitations include the step of reacting carried out in a suspension or in solid phase.

The Greene patent teaches polysaccharide substituted by a monovalent aliphatic group containing at least two carboxylic acid groups derived from epoxy succinic acid (malatyl cellulose) and a method of their preparation (see abstract).

Greene patent discloses a malatyl polysaccharide (cellulose), which is derivatized with the monovalent aliphatic groups containing at least two carboxylic acid groups, derived

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from 2,3-epoxysuccinic acid (see col. 2, lines 25-33). Green patent discloses the preparation of the said polysaccharide by reacting the polysaccharide at alkaline pH in aqueous alcohol solution with an aliphatic polycarboxylic acid having an epoxy group such as 2,3-epoxysuccinic acid or a mixture thereof (col.2, lines 15-32). The method of preparation is disclosed in col. 8, Example 1. The disodium salt of the derivatized malatyl polysaccharides is disclosed in col. 2, lines 64-67. In col.3, lines 50-53, examples of derivatized polysaccharides including cellulose, starch and natural gum (galactomannans) are disclosed. It is noted that the present invention is directed to prepare a malatyl polysaccharide by the reaction of epoxy succinate (disodium salt of cis-epoxy succinic acid) with a polysaccharide (see specification page 3, lines 14-15). In col.4, lines 66-67 and col. 5, lines 1-18, a derivatized cellulose (malatyl derivative) is prepared in a solid phase reaction, where a paper containing cellulose is derivatized with epoxy succinate.

The Greene patent differs from the applicant's invention that Greene patent does not provide the explicit chemical structures of the derivatized malatyl polysaccharides. It would have been obvious to person having ordinary skill in this art at the time the invention was made, to prepare the malatyl polysaccharides using the method of Greene patent because the art teaches the preparation of a derivatized cellulose (malatyl derivative) in a suspension or solid phase reaction, by reacting a polysaccharide with an epoxysuccinic acid, the characteristics desirable wherein the carboxyl groups are maintained in their preparation because Greene patent teaches a

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derivatized polysaccharide in which the hydroxyl group is substituted by monovalent aliphatic groups containing at least two carboxylic acid groups (see col.1, lines 60-65). One would be motivated to use the derivatized polysaccharide in which at least a portion of the active hydrogens originally present in the polysaccharide are substituted by monovalent aliphatic groups consisting a carboxylic group in order to produce disposable absorbent products at low cost (col.1, lines 54-58).

Rejection Maintained

Rejection of claims 8-13 under 35 U.S.C. 103(a) is maintained for the reasons of record.

Response to Arguments

Applicant's arguments filed on 12/01/03 traversing the rejection of claims 8-13 under 35 U.S.C 103(a) have been fully considered but they are not persuasive.

Applicants argue that "the prior art does not suggest a pH value of 9-13 for carrying out the reaction". Greene patent discloses the preparation of the said polysaccharide by reacting the polysaccharide at alkaline pH in aqueous alcohol solution with an aliphatic polycarboxylic acid having an epoxy group such as 2,3-epoxysuccinic acids or a mixture thereof (col.2, lines 15-32); however the art is silent in the disclosure of the alkaline pH range. Indeed, the examiner has established a prima facie case of obviousness rendering claims 8-13 rejected under 35 U.S.C. 103(a) by addressing sufficiently all of the limitations set forth in the instant claims, one skilled in the art would have a reasonable expectation for success in following the above said reference to accomplish a derivatized polysaccharide in which at least a portion of the active hydrogens originally present in the polysaccharide are substituted by monovalent aliphatic groups

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consisting a carboxylic group which can be used to produce disposable absorbent products at low cost.

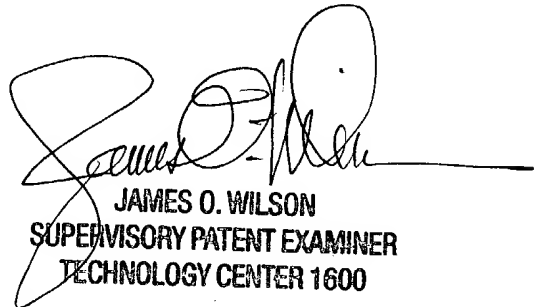
Any inquiry concerning this communication or earlier communications from the

Examiner should be directed to Devesh Khare whose telephone number is 571-272-0653. The examiner can normally be reached on Monday to Friday from 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson, Supervisory Patent Examiner, Art Unit 1623 can be reached at 571-272-0661. The official fax phone numbers for the organization where this application or proceeding is assigned is (703) 308-4556 or 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

Devesh Khare, Ph.D.,JD(3Y).
Art Unit 1623
April 13,2004



JAMES O. WILSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600